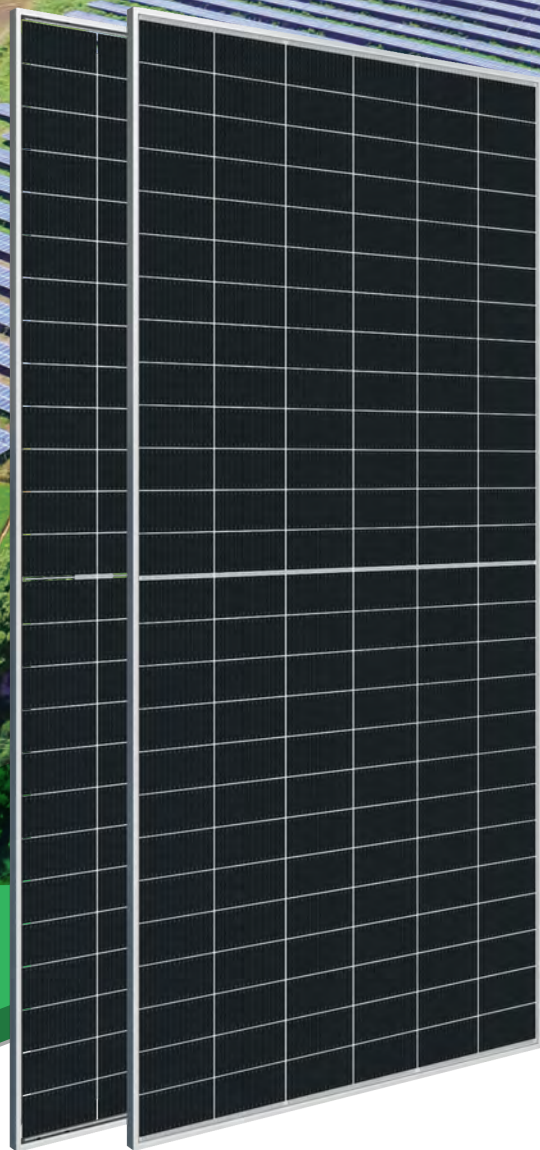




ASTRONERGY



# ASTRO N5

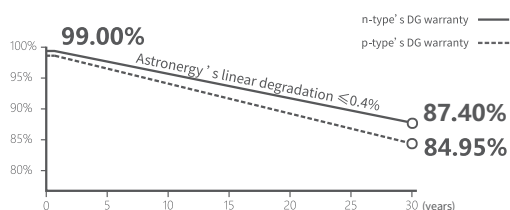
CHSM78N(DG)/F-BH  
Bifacial Series

## 615~640W

### Warranty

**15** 15-year Product Warranty

**30** 30-year Linear Power Warranty



### Key Features

- TOPCon / Half-cut
- Low temperature coefficient (Pmpp)
- Non-destructive cutting
- PID resistance
- Low BOS cost & LCOE
- Bifacial gain



ISO 9001:2015:ISO Quality Management System  
ISO 14001:2015:ISO Environment Management System  
ISO 45001:Occupational Health and Safety  
The first solar company which passed the Nord IEC/TS 62941 certification audit



Tier 1  
BloombergNEF



615~640W

POWER RANGE

0~+3%

POWER SORTING

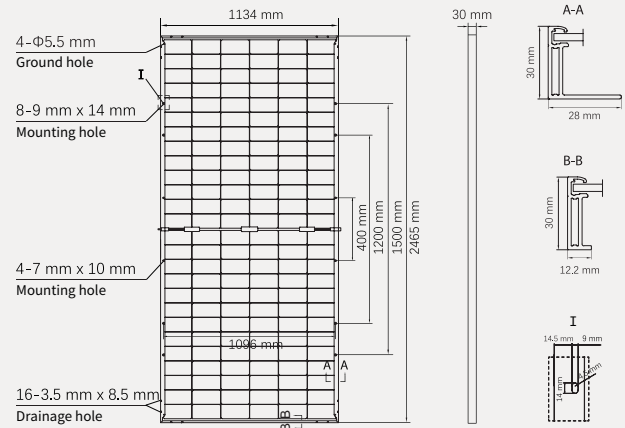
22.9%

MAX MODULE  
EFFICIENCY $\leq 1.0\%$ FIRST YEAR  
POWER DEGRADATION $\leq 0.4\%$ YEAR 2-30  
POWER DEGRADATION

## Mechanical Specifications

Outer dimensions (L x W x H)	2465 x 1134 x 30 mm
Cell type	n-type mono-crystalline
No. of cells	156 (6*26)
Frame technology	Aluminum, silver anodized
Front / Back glass	2.0+2.0 mm
Cable length (Including connector)	Portrait: (+)350 mm, (-)250 mm; Customized length
Cable diameter (IEC/UL)	4 mm <sup>2</sup> / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 (Standard) / MC4-EVO2A (Optional)
Module weight	34.7 kg
Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	1304 kg
Modules per 40' HQ container	576 pcs (Subject to sales contract)

① Refer to Astronergy crystalline installation manual or contact technical department.  
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.



## Electrical Specifications

**STC:** Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25° C, AM=1.5

Rated output (P <sub>mp</sub> / W <sub>p</sub> )	615	620	625	630	635	640
Rated voltage (V <sub>mp</sub> / V)	45.96	46.12	46.29	46.45	46.62	46.79
Rated current (I <sub>mp</sub> / A)	13.38	13.44	13.50	13.56	13.62	13.68
Open circuit voltage (V <sub>oc</sub> / V)	55.61	55.81	56.01	56.21	56.41	56.61
Short circuit current (I <sub>sc</sub> / A)	13.95	14.03	14.11	14.19	14.27	14.35
Module efficiency	22.0%	22.2%	22.4%	22.5%	22.7%	22.9%

**NMOT:** Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

Rated output (P <sub>mp</sub> / W <sub>p</sub> )	462.5	466.2	470.0	473.8	477.5	481.3
Rated voltage (V <sub>mp</sub> / V)	43.26	43.41	43.57	43.73	43.88	44.03
Rated current (I <sub>mp</sub> / A)	10.69	10.74	10.79	10.83	10.88	10.93
Open circuit voltage (V <sub>oc</sub> / V)	52.82	53.01	53.20	53.39	53.58	53.77
Short circuit current (I <sub>sc</sub> / A)	11.26	11.32	11.39	11.45	11.52	11.58

## Electrical Specifications (Integrated power)

P <sub>mp</sub> gain	P <sub>mp</sub> / W <sub>p</sub>	V <sub>mp</sub> / V	I <sub>mp</sub> / A	V <sub>oc</sub> / V	I <sub>sc</sub> / A
5%	662	46.45	14.24	56.21	14.90
10%	693	46.45	14.92	56.21	15.61
15%	725	46.46	15.60	56.22	16.32
20%	756	46.46	16.27	56.22	17.02
25%	788	46.46	16.95	56.22	17.73

Electrical characteristics with different rear power gain (reference to 630W)

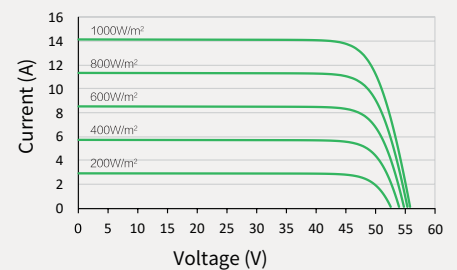
## Temperature Ratings (STC)

## Operating Parameters

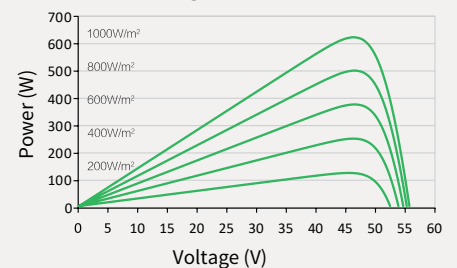
Temperature coefficient (P <sub>mp</sub> )	-0.29%/°C	No. of diodes	3
Temperature coefficient (I <sub>sc</sub> )	+0.043%/°C	Junction box IP rating	IP 68
Temperature coefficient (V <sub>oc</sub> )	-0.25%/°C	Max. series fuse rating	30 A
Nominal module operating temperature (NMOT)	41±2°C	Max. system voltage (IEC/UL)	1500V <sub>DC</sub>

## Curve

Current-Voltage (630W)



Power-Voltage (630W)



Current-Voltage (630W)

